SUPER 12s

SUPER 12s CAN BE USED AS AN INDIVIDUALISED MASTERY LEARNING PROGRAM.

2 ALGEBRA
2.1 CONVENTIONS
2.1 LEVEL 6

NAME : _____

Skill description: Understanding equivalent terms and expressions.

Essential Revision

1. $14 + 7 =$

2. Which of these is an equation?

$2b$

$3x = 12$

$4b - 4$

3. Write using the correct algebraic conventions.

$b^1 + 0$

4. Write using the correct algebraic conventions.

$7 \div x$

5. Write an algebraic expression for:

x minus 11

6. Write an algebraic expression for:

Subtract c from d, then subtract 4 from the result.

7.

$$16 - 8 =$$

8. Identify the terms.

$$9x + 3 = 12$$

9. Write using the correct algebraic conventions.

$$4x^0$$

10. Write using the correct algebraic conventions.

$$e \times d$$

11. Write an algebraic term for:

The product of 7 and g.

12. Write an algebraic expression for:

Add 5 to x then multiply the result by 4.

Solutions can be found at the end of the booklet.

score $\frac{\quad}{12}$

STRATEGIES TO SOLVE THE PROBLEMS

Conventions in mathematics state that when we write terms with variables and constants, the constant is written first, followed by the variables alphabetically.

For example, following mathematical conventions, we write:

$$3ab \quad \text{not} \quad ba3$$

Even though they mathematically equate.

When writing algebraic fractions involving a negative, the negative can be placed before the fraction, with the numerator, or with the denominator. They all mathematically equate.

$$-\frac{a}{b} \quad \text{or} \quad \frac{-a}{b} \quad \text{or} \quad \frac{a}{-b}$$

If the numerator and denominator of a fraction are both negative, the negatives cancel each other out, and the fraction is written with positive values.

$$\frac{-a}{-b} \quad \text{equates to} \quad \frac{a}{b}$$

These mathematical expressions are also equivalent:

$3x + y$ is mathematically equivalent to $y + 3x$

With the following expression, be aware the negative belongs to the variable b.

$2a - b$ is mathematically equivalent to $-b + 2a$

Example 1

$x6y$ is mathematically equivalent to:

a) $x6xy$

b) $y6y$

c) $6yx$

d) $6xy$

Solution

'c' and 'd' are both mathematically equivalent to $x6y$.

Example 2

$\frac{-2x}{y}$ is mathematically equivalent to:

a) $-\frac{2x}{y}$

b) $\frac{2x}{y}$

c) $\frac{-2x}{-y}$

d) $\frac{2x}{-y}$

Solution

'a' and 'd' are both mathematically equivalent to $\frac{-2x}{y}$.

Example 3

$4x - 3y$ is mathematically equivalent to:

a) $-3y + 4x$

b) $4x + 3y$

c) $3x - 4y$

d) $-3x + 4y$

Solution

'a' is mathematically equivalent to $4x - 3y$.

QUESTIONS

1. $4ab^2$ is mathematically equivalent to:

a) $a^2 4b^2$

b) $4b^2 a$

c) $ab^3 4$

d) $2a2b^2$

2. $\frac{2a}{c}$ is mathematically equivalent to:

a) $-\frac{2a}{c}$

b) $\frac{2a}{-c}$

c) $\frac{-2a}{-c}$

d) $-\frac{-2a}{-c}$

3. $-2a + 5b$ is mathematically equivalent to:

a) $-2a^2 + 5b$

b) $-2a - 5b$

c) $-2b + 5a$

d) $5b - 2a$

4. $x^2 y3$ is mathematically equivalent to:

a) $x3xy$

b) $yx6y$

c) $3y^2 x$

d) $3xy$

5. $\frac{5x^2}{-y}$ is mathematically equivalent to:

a) $-\frac{5x^2}{y}$

b) $\frac{-5x^2}{y}$

c) $\frac{-5x^2}{-y}$

d) $\frac{5x^2}{y}$

6. $7x - 2y$ is mathematically equivalent to:

a) $7x - 2y^2$

b) $-2y + 7x$

c) $-2y + 7y$

d) $7y - 2x$

7. $-5dc$ is mathematically equivalent to:

a) $-do5$

b) $-cd5$

c) $5dc$

d) $-5bc$

8. $-\frac{x^2b}{2}$ is mathematically equivalent to:

a) $-\frac{2xb}{2}$

b) $\frac{-bx^2}{2}$

c) $-\frac{xb^2}{2}$

d) $\frac{x^2b}{-2}$

9. $8x^2 - 3y$ is mathematically equivalent to:

a) $-3y + 8x^2$

b) $x^2 8 - y3$

c) $8y^2 - 3x$

d) $-8x^2 - 3y$

10. $4y^2x^3$ is mathematically equivalent to:

a) $4y^3x^2$

b) $x^3y^2 4$

c) $y^3x^2 4$

d) $y^2 4x^3$

11. $\frac{ab^3}{-4c^2}$ is mathematically equivalent to:

a) $\frac{-ab^3}{4c^2}$

b) $\frac{-ab^2}{4c^3}$

c) $\frac{-ab^3}{-4c^2}$

d) $-\frac{-ab^3}{4c^2}$

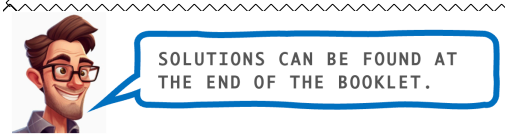
12. $4ab^2 - 2y$ is mathematically equivalent to:

a) $-2y + 4a^2b$

b) $-2y - 4ab^2$

c) $-2y + 4ab^2$

d) $4ab^3 - 2y$



score $\frac{\quad}{12}$

MASTERY TEST

Teacher's signature

I'VE COMPLETED

_____

LEVELS THIS YEAR

Solutions to Essential Revision

1. 21	2. $3x = 12$
3. b	4. $\frac{7}{x}$
5. $x - 11$	6. $d - c - 4$
7. 8	8. $9x,\ 3,\ 12$
9. 4	10. de
11. $7g$	12. $4(x + 5)$

Solutions to Questions

1. b,d	2. c
3. d	4. a
5. a,b	6. b
7. b	8. b,d
9. a,b	10. b,d
11. a	12. c